

receiving power from resistance grounded systems, separate connections shall be used.

**§ 77.903 Disconnecting devices.**

Disconnecting devices shall be installed in circuits supplying power to portable or mobile equipment and shall provide visual evidence that the power is disconnected.

**§ 77.904 Identification of circuit breakers.**

Circuit breakers shall be labeled to show which circuits they control unless identification can be made readily by location.

**§ 77.905 Connection of single-phase loads.**

Single-phase loads shall be connected phase-to-phase in resistance grounded systems.

**§ 77.906 Trailing cables supplying power to low-voltage mobile equipment; ground wires and ground check wires.**

On and after September 30, 1971, all trailing cables supplying power to portable or mobile equipment from low-voltage three-phase resistance grounded power systems shall contain one or more ground conductors having a cross-sectional area of not less than one-half the power conductor. Such trailing cables shall include an insulated conductor for the ground continuity check circuit except where a no less effective device has been approved by the Secretary to assure continuity. Splices made in low-voltage trailing cables shall provide continuity of all components.

**Subpart K—Ground Control**

**§ 77.1000 Highwalls, pits and spoil banks; plans.**

Each operator shall establish and follow a ground control plan for the safe control of all highwalls, pits and spoil banks to be developed after June 30, 1971, which shall be consistent with prudent engineering design and will insure safe working conditions. The mining methods employed by the operator shall be selected to insure highwall and spoil bank stability.

**§ 77.1000-1 Filing of plan.**

The operator shall file a copy of such plan, and revisions thereof, with the MSHA Coal Mine Safety and Health district office for the district in which the mine is located, and shall identify the name and location of the mine; the Mine Safety and Health Administration identification number if known; and the name and address of the mine operator.

(Pub. L. No. 96-511, 94 Stat. 2812 (44 U.S.C. 3501 et seq.))

[36 FR 9364, May 22, 1971, as amended at 60 FR 33723, June 29, 1995; 71 FR 16669, Apr. 3, 2006]

**§ 77.1001 Stripping; loose material.**

Loose hazardous material shall be stripped for a safe distance from the top of pit or highwalls, and the loose unconsolidated material shall be sloped to the angle of repose, or barriers, baffle boards, screens, or other devices be provided that afford equivalent protection.

**§ 77.1002 Box cuts; spoil material placement.**

When box cuts are made, necessary precautions shall be taken to minimize the possibility of spoil material rolling into the pit.

**§ 77.1003 Benches.**

To insure safe operation, the width and height of benches shall be governed by the type of equipment to be used and the operation to be performed.

**§ 77.1004 Ground control; inspection and maintenance; general.**

(a) Highwalls, banks, benches, and terrain sloping into the working areas shall be examined after every rain, freeze, or thaw before men work in such areas, and such examination shall be made and recorded in accordance with § 77.1713.

(b) Overhanging highwalls and banks shall be taken down and other unsafe ground conditions shall be corrected promptly, or the area shall be posted.

**§ 77.1005 Scaling highwalls; general.**

(a) Hazardous areas shall be scaled before any other work is performed in the hazardous area. When scaling of

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highwalls is necessary to correct conditions that are hazardous to persons in the area, a safe means shall be provided for performing such work.

(b) Whenever it becomes necessary for safety to remove hazardous material from highwalls by hand, the hazardous material shall be approached from a safe direction and the material removed from a safe location.

**§ 77.1006 Highwalls; men working.**

(a) Men, other than those necessary to correct unsafe conditions, shall not work near or under dangerous highwalls or banks.

(b) Except as provided in paragraph (c) of this section, men shall not work between equipment and the highwall or spoil bank where the equipment may hinder escape from falls or slides.

(c) Special safety precautions shall be taken when men are required to perform repair work between immobilized equipment and the highwall or spoil bank and such equipment may hinder escape from falls or slides.

**§ 77.1007 Drilling; general.**

(a) Equipment that is to be used during a shift shall be inspected each shift by a competent person. Equipment defects affecting safety shall be reported.

(b) Equipment defects affecting safety shall be corrected before the equipment is used.

**§ 77.1008 Relocation of drills; safeguards.**

(a) When a drill is being moved from one drilling area to another, drill steel, tools, and other equipment shall be secured and the mast placed in a safe position.

(b) When a drill helper is used his location shall be made known to the operator at all times when the drill is being moved.

**§ 77.1009 Drill; operation.**

(a) While in operation drills shall be attended at all times.

(b) Men shall not drill from positions that hinder their access to the control levers, or from insecure footing or staging, or from atop equipment not designed for this purpose.

(c) Men shall not be on a mast while the drill bit is in operation unless a

safe platform is provided and safety belts are used.

(d) Drill crews and others shall stay clear of augers or drill stems that are in motion. Persons shall not pass under or step over a moving stem or auger.

(e) In the event of power failure, drill controls shall be placed in the neutral position until power is restored.

(f) When churn drills or vertical rotary drills are used, drillers shall not be permitted to work under suspended tools, and when collaring holes, inspecting, or during any operation in which tools are removed from the hole, all tools shall be lowered to the ground or platform.

**§ 77.1010 Collaring holes.**

(a) Starter steels shall be used when collaring holes with hand-held drills.

(b) Men shall not hold the drill steel while collaring holes, or rest their hands on the chuck or centralizer while drilling.

**§ 77.1011 Drill holes; guarding.**

Drill holes large enough to constitute a hazard shall be covered or guarded.

**§ 77.1012 Jackhammers; operation; safeguards.**

Men operating or working near jackhammers or jackleg drills, or other drilling machines shall position themselves so that they will not be struck or lose their balance if the drill steel breaks or sticks.

**§ 77.1013 Air drills; safeguards.**

Air shall be turned off and bled from the air hoses before hand-held air drills are moved from one working area to another.

**Subpart L—Fire Protection**

**§ 77.1100 Fire protection; training and organization.**

Firefighting facilities and equipment shall be provided commensurate with the potential fire hazards at each structure, enclosure and other facility (including custom coal preparation) at the mine and the employees at such facilities shall be instructed and trained annually in the use of such firefighting facilities and equipment.